

## CLAIMS

WHAT IS CLAIMED IS:

1. A stream switching system, comprising:  
a stream switching housing having at least one common stream channel portion with a plurality of input ports and at least one output port;  
tubing connected at least one of said output ports,  
said tubing at least in part being a pre-heat coil suitable to heat a gas sample traveling through said coil and to act as a flow restrictor.

2. The stream switching system of claim 1, further comprising:  
an insulated housing forming an interior region and encapsulating said stream switching housing in said interior region, said insulated housing stabilizing a temperature of said stream switching housing.

3. The stream switching system of claim 2, further comprising:  
a heater within said interior region.

4. The stream switching system of claim 2, further comprising:  
a plurality of gas flow actuation switches positioned outside of said insulated housing;  
piping connecting said plurality of fluid flow actuation switches to said insulated housing.

1           5.     The stream switching system of claim 4, wherein said fluid flow actuation switches  
2 are solenoids.

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4           6.     The stream switching system of claim 5, wherein said piping connects said solenoid  
5 to said stream switching housing.

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7           7.     The stream switching system of claim 3, wherein said fluid flow actuation switches  
8 connect to said insulated housing.

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10          8.     The stream switching system of claim 3, wherein said fluid flow actuation switches  
11 are remote from said insulated housing.

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13          9.     A stream switching system, comprising:

14               a stream switching housing having a common stream channel portion with a  
15 plurality of actuatable input ports and at least one actuatable output port, each of said ports  
16 being actuatable between an open position permitting the flow of fluid through the port, and  
17 a closed position not permitting the flow of fluid through the port;

18               a plurality of fluid flow actuation switches associated with said actuatable ports, said  
19 fluid flow actuation switches controlling the placement of said actuatable ports between said  
20 open and closed positions, said fluid flow actuation switches requiring an outside impulse to  
21 place said actuatable ports in said open position.

1           10.    The stream switching system of claim 9, wherein each of said fluid flow actuation  
2 switches corresponds to a single actuatable port of said actuatable input ports and said output ports.

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4           11.    The stream switching system of claim 9, wherein said fluid flow actuation switches  
5 are solenoids.

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7           12.    The stream switching system of claim 9, wherein each of said fluid flow actuation  
8 switches connects to a pressurized line of actuation fluid, said activation fluid of sufficient pressure  
9 to place said ports in said open position.

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11           13.    A stream switching system, comprising:  
12                   a sample point location;  
13                   a stream switching portion;  
14                   tubing connecting said sample point location to said stream switching system  
15                   portion;  
16                   one or more membrane or cartridge filters connected to said tubing and located  
17 proximate the sample point and between said sample point location and said stream  
18 switching portion.

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20           14.    The stream switching system of claim 13, wherein said membrane or cartridge filters  
21 are within 10 feet of said sample point.

1            15.    The stream switching system of claim 13, wherein said membrane or cartridge filters  
2 are within 3 feet of said sample point.

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4            16.    The stream system of claim 13, further comprising:  
5                    a pressure regulation device proximate said sample point.

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7            17.    The stream switching system of claim 16, wherein said pressure regulation device is  
8 upstream said membrane or cartridge filters.

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H2

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